

What is claimed is:

1. A flat panel display comprising:

a light emitting device;

a switching thin film transistor including a semiconductor active layer having a channel

5 area for transferring a data signal to the light emitting device; and

a driving thin film transistor including a semiconductor active layer having a channel area
for driving the light emitting device so that a predetermined current flows through the light
emitting device according to the data signal,

wherein the channel area of the switching thin film transistor has crystal grains which are
10 different from crystal grains in the channel of the driving thin film transistor.

2. The flat panel display of claim 1, wherein the channel area of the switching thin
film transistor and the channel area of the driving thin film transistor have different current
mobilities due to the crystal grain associated with each.

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3. The flat panel display of claim 2, wherein the current mobility in the channel area
of the switching thin film transistor is greater than the current mobility in the channel area of the
driving thin film transistor due to the crystal grains associated with each.

20 4. The flat panel display of claim 1, wherein the crystal grains of the switching
transistor have an average size which is different from an average size of the crystal grains of the
driving transistor.

5. The flat panel display of claim 4, wherein the current mobility in the channel area of the switching thin film transistor is larger than the current mobility in the channel area of the driving thin film transistor due to the average size of crystal grains associated with each.

5 6. The flat panel display of claim 4, wherein between the switching thin film transistor and the driving thin film transistor, an average size of crystal grains in the channel area of the thin film transistor requiring a larger current mobility is larger than an average size of crystal grains in the channel area of the thin film transistor with a lower current mobility.

10 7. The flat panel display of claim 4, wherein the average size of crystal grains in the channel area of the switching thin film transistor is larger than the average size of crystal grain in the channel area of the driving thin film transistor.

15 8. The flat panel display of claim 1, wherein the crystal grains in the channel area of the switching thin film transistor have a different shape than the crystal grains in the driving thin film transistor.

20 9. The flat panel display of claim 8, wherein between the switching thin film transistor and the driving thin film transistor the channel area of the thin film transistor requiring a lower current mobility have shapeless grain boundaries.

10. The flat panel display of claim 9, wherein the crystal grains in the channel area of the thin film transistor requiring a larger current mobility than the current mobility of the thin

film transistor having the shapeless grain boundaries includes substantially parallel primary grain boundaries, and secondary grain boundaries extending in a substantially perpendicular direction from the primary grain boundaries between the primary grain boundaries, and the primary grain boundaries are formed as a stripe or a rectangle.

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11. The flat panel display of claim 8, wherein between the switching thin film transistor and the driving thin film transistor, the crystal grains in the channel area of the thin film transistor requiring higher current mobility include substantially parallel primary grain boundaries, and secondary grain boundaries which extend in a substantially perpendicular
10 direction from the primary grain boundaries between the primary grain boundaries and are arranged with an average interval which is shorter than an average interval of primary grain boundaries, the primary grain boundaries are formed to have stripe shapes, and the channel areas are arranged so that a flowing direction of the current is vertical for the primary grain boundaries.

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12. The flat panel display of claim 11, wherein the channel area of the thin film transistor requiring lower current mobility than that of the thin film transistor having the primary grain boundaries of stripe shapes include at least one of shapeless grain boundaries and grain boundaries having primary grain boundaries of substantially rectangular shapes.

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13. The flat panel display of claim 8, wherein between the switching thin film transistor and the driving thin film transistor, the crystal grains in the channel area of the thin film transistor requiring higher current mobility include substantially parallel primary grain

boundaries, and secondary grain boundaries extending substantially perpendicular from the primary grain boundaries between the primary grain boundaries, and the primary grain boundaries have substantially rectangular shapes.

5 14. The flat panel display of claim 8, wherein the crystal grains in the channel area of the driving thin film transistor have shapeless grain boundaries.

15 15. The flat panel display of claim 14, wherein the crystal grains in the channel area of the switching thin film transistor have substantially parallel primary grain boundaries and
10 secondary grain boundaries extending substantially perpendicularly from toward vertical direction for the primary grain boundaries between the primary grain boundaries, and the primary grain boundaries are formed as stripes or rectangles.

15 16. The flat panel display of claim 8, wherein the crystal grains in the channel area of the switching thin film transistor include substantially parallel primary grain boundaries and
secondary grain boundaries which substantially perpendicularly from the primary grain
boundaries between the primary grain boundaries and have an average shorter interval than an
average shorter interval of the primary grain boundaries, the primary grain boundaries are
formed to be substantially stripe shapes, and a direction of current flow in the channel area is
20 substantially perpendicular to the primary grain boundaries.

17. The flat panel display of claim 16, wherein the crystal grains in the channel area of the driving thin film transistor have at least one of shapeless grain boundaries and grain boundaries having primary grain boundaries of substantially square shapes.

5 18. The flat panel display of claim 8, wherein the crystal grains in the channel area of the switching thin film transistor have substantially parallel primary grain boundaries and secondary grain boundaries extending substantially perpendicularly from the primary grain boundaries between the primary grain boundaries, and the primary grain boundaries are formed as substantially square shapes.

10 19. The flat panel display of claim 1, wherein the channel area of the active layer of the driving thin film transistor and the channel area of the switching thin film transistor is formed using a polycrystalline silicon.

15 20. The flat panel display of claim 19, wherein the polycrystalline silicon is formed using a crystallization method using a laser.